

Appendix A

NSPS and Emission Guideline Fact Sheet (40 CFR 60 Subpart Cc)

NSPS and Emission Guideline Fact Sheet (40 CFR 60 Subpart Cc)
Final Air Regulations for Municipal Solid Waste Landfills

On March 1, 1996, the Environmental Protection Agency (EPA), under authority of the Clean Air Act, issued a final regulation controlling emissions of a variety of air pollutants from new and existing large municipal solid waste landfills. This regulation was published in the Federal Register on March 12, 1996. Landfills subject to EPA's regulation accept and handle everyday household waste; they do not handle regulated hazardous waste. Currently, 60 percent of municipal solid waste generated in the United States is landfilled; 16 percent is incinerated; and 24 percent is recycled.

EPA worked in partnership with major stakeholders, including private industry, the National Association of Counties, the National League of Cities, and the Solid Waste Association of North America to develop the final rule.

What are the Health and Environmental Benefits?

As the waste in a landfill decomposes, it breaks down to form landfill gases, such as methane, smog-causing volatile organic compounds (VOCs), and air toxics, pollutants known or suspected of causing cancer and other serious health effects. Landfills are the largest anthropogenic source of methane emissions in the United States. Methane is a potent greenhouse gas that contributes to global warming.

EPA's final air rules for municipal solid waste landfills will achieve significant reductions in emissions of VOCs and air toxics, such as benzene, carbon tetrachloride, and chloroform. EPA's regulation will reduce emissions of VOCs, air toxics, and malodorous compounds from existing and new landfills by over 90,000 tons annually (a 53 percent reduction from current levels). This rulemaking will also result in significant reductions in emissions of methane, a major constituent of landfill gas and a potent greenhouse gas. By reducing methane emissions, EPA's regulation will also increase safety in and near landfills.

How Does Today's Action Relate to the U.S. Climate Change Action Plan?

Landfills are the largest anthropogenic source of methane emissions in the United States, constituting about 40 percent of these sources. Methane reductions of over 50 percent in the year 2000, anticipated under this rulemaking, as well as reductions achieved by EPA's Landfill Methane Outreach Program, are important components of the U.S. "Climate Change Action Plan" to reduce emissions of greenhouse gases to 1990 levels by the year 2000. The rule alone will reduce greenhouse gas emissions by 37.1 million metric tons of carbon equivalent (6.2 million tons of methane). When the outreach program is included as well, total reductions will be 38.6 mmtce (6.8 million tons of methane).

This rulemaking and the EPA Landfill Methane Outreach Program (LMOP) go hand-in-hand to provide substantial reductions in greenhouse gas emissions. The new regulations will cause many landfills across the country to assess their landfill gas emissions and the potential for cost-effective recovery of energy from this gas. The LMOP will provide these landfills with guidance on how to comply with the regulations, including how to evaluate energy recovery options. Working together, these two cornerstone actions of the Climate Change Action Plan will encourage many landfills to capture and use their landfill gas.

What are the Main Components of EPA's Final Rule?

EPA's final rule takes the form of new source performance standards for new landfills and emission guidelines for existing landfills. States will adopt and enforce the emission guidelines for existing landfills. The regulation will require large landfills that emit landfill gas in excess of 50 megagrams (Mg) per year to control emissions. In general, controlling emissions involves drilling collection wells into the landfill and routing the gas to a suitable energy recovery system or combustion device. Specifically, the regulations will require the following:

- New and existing landfills designed to hold 2.5 million Mg and 2.5 million m³ of waste or more will be required to install gas collection systems or prove that the landfill emits less than 50 Mg per year of non-methane organic compounds, including smog-causing VOCs and air toxics.

- EPA's final rule provides the owner or operator of a landfill with a tier system for determining if controls will be required. If the owner or operator initially calculates the emissions to be above the 50 Mg per year threshold by using default parameters provided in the regulation, the tier system provides the opportunity to conduct sampling and determine site specific values to demonstrate that emissions are below the emission threshold and that controls are not required.
- If emissions controls are required, the rule provides flexibility to industry by allowing landfill owners or operators to design their own gas collection and control system to fit their unique circumstances. A control device may be a flare or a device which utilizes the energy content of the gas, such as an internal combustion engine, a turbine, or a boiler.
- EPA's final rule contains an operational standard that requires a landfill's surface methane concentration to be monitored on a quarterly basis. If the surface concentration of methane is greater than 500 parts per million after three consecutive measurements, the regulation requires system expansion to comply with the rule.

The final rule will achieve substantial emission reductions without placing an undue financial burden on municipalities, and will place no burden on small municipalities (since small landfills are exempted from the regulation). Waste disposal costs will increase only about 20 to 40 cents per household. EPA anticipates that many landfills will use energy recovery systems, further reducing costs per household.

Who Will be Affected by EPA'S Final Rule?

Approximately 7000 landfills exist in the United States. However, over 90 percent of these landfills have design capacities less than the 2.5 million Mg exemption in the regulation. Thus, less than 10 percent are subject to the annual emission rate reports and/or control requirements. Of this 10 percent, about 6 percent will have emissions less than 50 Mg/yr, so will not be required to apply controls. The remaining 4 percent of the existing landfills nationwide will have emissions over 50 Mg/yr and will be subject to the control requirements of the Emission Guidelines.

For Further Information...

Anyone with a computer and a modem can download the final rule from the Clean Air Act Amendments bulletin board (look under "Recently Signed Rules") on EPA's electronic Technology Transfer Network (TTN) by calling (919) 541-5742. For further information about how to access the board, call (919) 541-5384. For technical questions about the rule, contact Martha Smith of EPA's Office of Air Quality Planning and Standards at (919) 541-2421. For information on the EPA Landfill Methane Outreach Program (LMOP), call the LMOP Hotline at (202) 233-9042.